LAPIS SEMICONDUCTOR

FEBL610Q111_RB-01

ML610Q111/ML610Q112 Reference Board User's Manual

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NOTES

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Preface

This document (user's manual) describes the explanation of the ML610Q111/ML610Q112 reference board.

ML610Q111 reference board is equipped with the 8-bit microcontroller ML610Q111.
ML610Q112 reference board is equipped with the 8-bit microcontroller ML610Q112.

The following manuals are also available in addition to this user's manual. Read them as necessary

■ ML610Q111/ML610Q112 User's Manual
- Description of the ML610Q111/ML610Q112

■ uEASE User's Manual
- Description of the on-chip debug tool uEASE.

ML610Q111/ML610Q112 Reference board is prepared by LAPIS SEMICONDUCTOR to have you study the operations of ML610Q111/ML610Q112.
The board is only minimum necessary components are mounted on the board by LAPIS SEMICONDUCTOR for brief use of ML610Q111/ML610Q112.
By using the board with "uEASE on-chip debug emulator" (hereinafter referred to "uEASE") and "free sample U8 Development Tools CD-ROM" which is bundled in the package of uEASE not only Software development/debugging but also writing Flash ROM in the devices are capable.
This board also works in stand alone mode with external power suppy without uEASE.
Before starting works with this board, read below carefully and understand notices.

1. The board features
   - Supports flash ROM programming (rewrite) and on-chip debugging (using RESET_N and TEST pins)
   - Selectable power supply (uEASE or peripheral)

2. The board hardware specifications
   Specific connection relationship of the mounted parts, please refer to the circuit diagram on page 7.

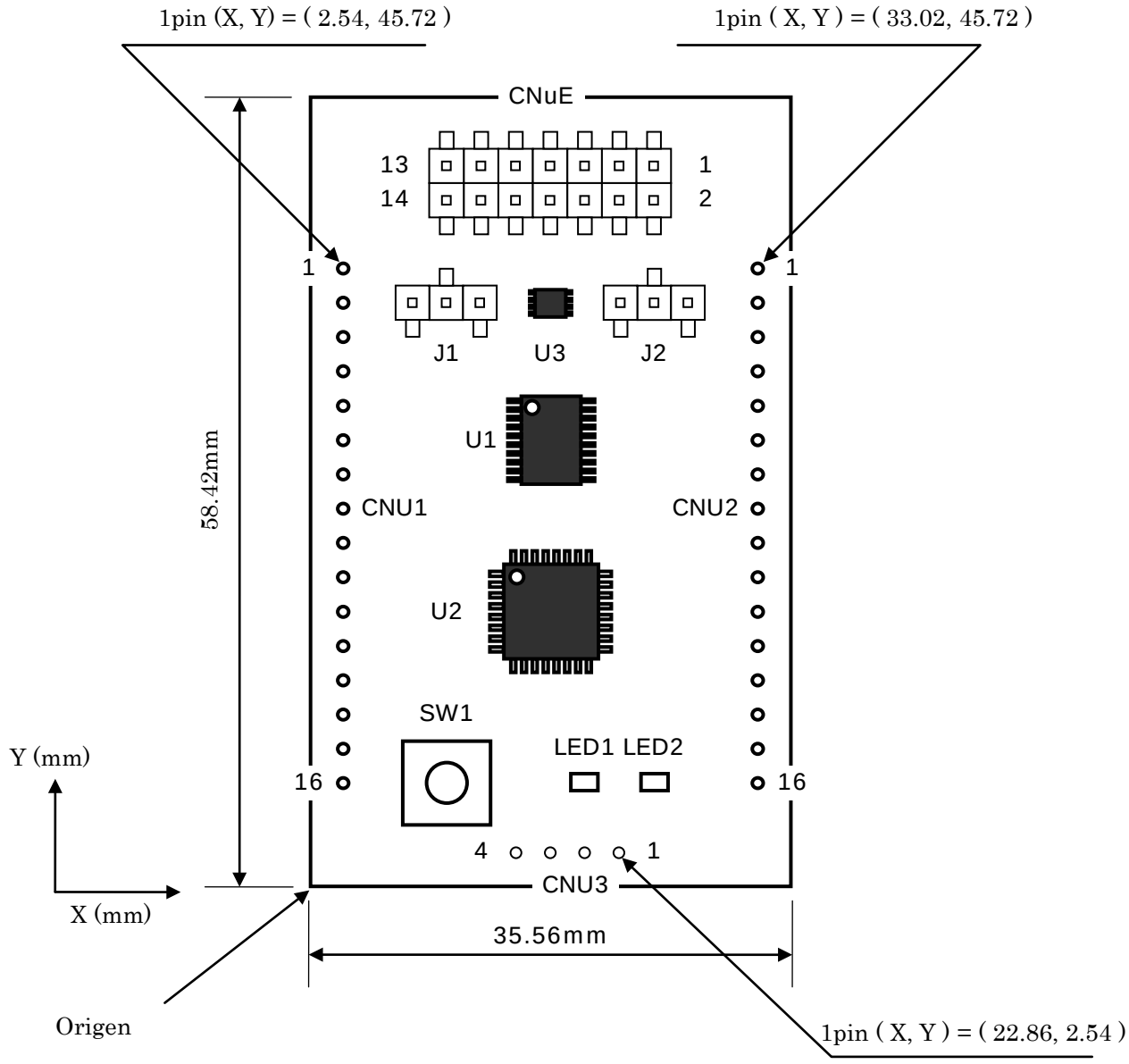
   Please refer to the reference schematics for detail on connections of each hardware parts.

Embedded microcontroller	ML610Q111 Reference Board U1: ML610Q111 ML610Q112 Reference Board U2: ML610Q112
Embedded parts	J1: Jumper for RESET_N switch (3pin pin-header and short pin)
	J2: Jumper for VDD switch (3pin pin-header and short pin)
	CNU1-3: Connector for Peripheral (CNU1,2: 16pin, CNU3: 4pin)
	CNUE: Connector for on-chip debug emulator (14pin connector)
	U3: Level shifter
	LED1-2: LED for display (LED1: connect to PB7, LED2: connect to PC1) *1
	SW1: Tactile switch (connect to PA0) *2
Operating voltage	+3.3V to +5.5V
Board size	35.56 x 58.42 mm

*1: When you use PB7 and PC1, please cut the pattern between the pads of J5 and J6.
*2: When you use PA0, please cut the pattern between the pads of J7.

3. Reference board dimensions and layout

The dimensions of this reference board and parts placement are shown below.



4. Notes on use

(1) The information contained herein can change without notice owing to product and/or technical improvements. Before using the product, please make sure that the information being referred to is up-to-date.

(2) Before using this board, read carefully and understand the contents of the ML610Q111/ML610Q112 user's manual and the uEASE user's manual.

(3) The engineering sample of ML610Q111/ML610Q112 is mounted on the board. Therefore, please confirm the characteristic finally by using MP of ML610Q111/ML610Q112 and customer's mass production boards.

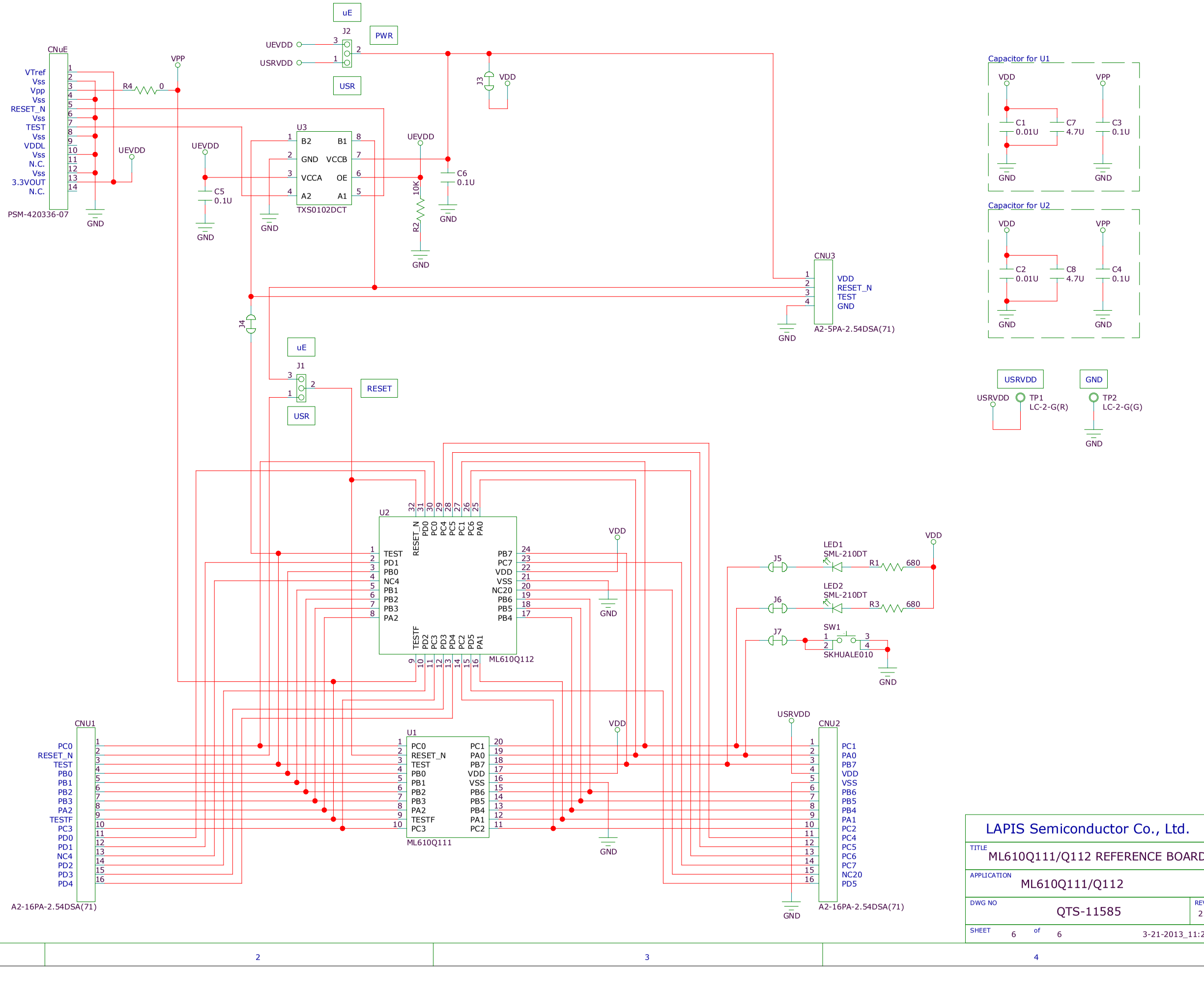
(4) When you use uEASE, please set J1 jumper to the uE side.

(5) When a power supply is given from the exterior, please be given by pin4 of CNU2 connector and set J2 jumper to the USR side.

(6) When you set J2 jumper to the USR side and uEASE is connected, please turn ON the power supply of a board before starting uEASE.
Moreover, please stop uEASE before turning off the power supply of a board.

(7) When J2 jumper is set to the uE side, the power supply capacity of uEASE. is +3.3V/100mA.

(8) This board has a conductivity pattern in the back, therefore it may short-circuits when it is used having put on the existing conductive component.



LAPIS Semiconductor Co., Ltd.	
TITLE	ML610Q111/Q112 REFERENCE BOARD
APPLICATION	ML610Q111/Q112
DWG NO	QTS-11585
REV	2.0
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